

Appendix F

Summary of Biological Data

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WVDP Annual Site Environmental Report

Calendar Year 2005

The following tables contain a bolding convention devised to help the reader, when viewing the data, to quickly see the range of detectable measurements within a data series. A data series is a set of chemical or radionuclide measurements (e.g., gross alpha, gross beta, tritium) from a single location or from similar locations. Note that some tables contain data that should not be technically evaluated under this convention.

Key to bolding convention:

Results for each constituent constitute a single data series. If a radiological result is larger than the uncertainty term, the measurement is considered positive. Otherwise, a result is considered nondetectable.

If all results in a data series are positive, the lowest and highest values are bolded.

If a data series contains some positive results, the highest value is bolded.

If all values in a data series are nondetectable, no values are bolded.

Table F-1
2005 Radioactivity Concentrations in Milk

Location	H-3 ($\mu\text{Ci/mL}$)	K-40 ($\mu\text{Ci/mL}$)	Sr-90 ($\mu\text{Ci/mL}$)	I-129 ($\mu\text{Ci/mL}$)	Cs-137 ($\mu\text{Ci/mL}$)
BFMREED^a (NNW Farm)					
1st Quarter	0.54±1.09E-07	1.38±0.12E-06	1.93±0.94E-09	-0.77±3.33E-10	0.72±2.47E-09
2nd Quarter	NA	1.34±0.22E-06	8.84±6.35E-10	-1.50±2.81E-10	0.79±5.35E-09
BFMWIDR^b (SE Farm)					
4th Quarter	NA	1.46±0.17E-06	7.32±5.68E-10	-0.92±1.56E-10	3.57±3.34E-09
BFMCTL^s (Control)					
Annual	NA	1.40±0.12E-06	1.02±0.82E-09	1.81±4.01E-10	0.05±1.56E-09
BFMSCHT^c (S Farm)					
Annual	NA	1.33±0.16E-06	1.16±0.78E-09	-0.68±3.45E-10	-0.81±3.15E-09
BFMBLSY^c (WNW Farm)					
Annual	NA	1.63±0.15E-06	3.30±2.49E-10	1.10±2.19E-10	0.83±3.12E-09

Note: Bolding convention not applicable to these data.

Note: Tritium analysis on all milk samples was discontinued in April 2005

^a The BFMREED dairy discontinued production during the second quarter of 2005.

^b The frequency of collection at the BFMWIDR farm was increased from annual to quarterly in late 2005.

^c Milk sample collection at the BFMBLSY dairy was initiated in the fall of 2005.

Table F-2
2005 Radioactivity Concentrations in Venison

Location	% Moisture	H-3 ($\mu\text{Ci/mL}$)	K-40 ($\mu\text{Ci/g - dry}$)	Sr-90 ($\mu\text{Ci/g - dry}$)	Cs-137 ($\mu\text{Ci/g - dry}$)
Deer Background (BFDCTRL 11/05)	75.0	1.55±1.11E-07	1.09±0.10E-05	2.57±2.41E-09	6.89±5.45E-08
Deer Background (BFDCTRL 11/05)	63.6	1.49±1.07E-07	1.23±0.05E-05	-0.32±2.03E-09	1.31±0.28E-07
Deer Background (BFDCTRL 11/05)	65.0	0.52±1.08E-07	8.93±0.74E-06	3.07±2.77E-09	1.35±0.28E-07
Deer Near-Site (BFDNEAR 09/05)	72.0	1.03±1.09E-07	1.28±0.11E-05	2.37±2.12E-09	3.15±2.27E-08
Deer Near-Site (BFDNEAR 10/05)	74.6	1.00±1.07E-07	1.36±0.05E-05	1.40±2.19E-09	8.11±2.42E-08
Deer Near-Site (BFDNEAR 11/05)	73.2	1.53±1.10E-07	1.10±0.08E-05	1.31±2.42E-09	1.12±0.28E-07

Note: Bolding convention applied to these data. See page F-2^{CD}

Table F-3
2005 Radioactivity Concentrations in Food Crops

Location	% Moisture	H-3 ($\mu\text{Ci/mL}$)	K-40 ($\mu\text{Ci/g - dry}$)	Co-60 ($\mu\text{Ci/g - dry}$)	Sr-90 ($\mu\text{Ci/g - dry}$)	Cs-137 ($\mu\text{Ci/g - dry}$)
<u>APPLES</u>						
Background						
(BFVCTRA)	86.0	$0.43 \pm 1.44 \times 10^{-7}$	$1.04 \pm 0.11 \times 10^{-5}$	$1.52 \pm 2.69 \times 10^{-8}$	$3.12 \pm 1.88 \times 10^{-9}$	$1.52 \pm 6.65 \times 10^{-8}$
Near-Site						
(BFVNNEAAF)	85.9	$1.68 \pm 1.46 \times 10^{-7}$	$7.11 \pm 1.04 \times 10^{-6}$	$1.33 \pm 2.72 \times 10^{-8}$	$3.34 \pm 9.96 \times 10^{-10}$	$2.66 \pm 2.93 \times 10^{-8}$
<u>BEANS</u>						
Background						
(BFVCTRB)	92.0	$1.29 \pm 1.25 \times 10^{-7}$	$3.72 \pm 0.24 \times 10^{-5}$	$1.32 \pm 2.17 \times 10^{-8}$	$5.02 \pm 0.46 \times 10^{-8}$	$1.29 \pm 1.85 \times 10^{-8}$
Near-Site						
(BFVNNEAB)	91.4	$1.48 \pm 1.29 \times 10^{-7}$	$3.72 \pm 0.19 \times 10^{-5}$	$1.24 \pm 2.52 \times 10^{-8}$	$6.52 \pm 0.45 \times 10^{-8}$	$0.78 \pm 2.21 \times 10^{-8}$
<u>CORN</u>						
Background						
(BFVCTRC)	85.5	$1.57 \pm 1.30 \times 10^{-7}$	$1.57 \pm 0.13 \times 10^{-5}$	$0.78 \pm 2.70 \times 10^{-8}$	$0.82 \pm 2.79 \times 10^{-9}$	$1.17 \pm 2.56 \times 10^{-8}$
Near-Site						
(BFVNNEAC)	86.4	$2.10 \pm 1.29 \times 10^{-7}$	$1.99 \pm 0.15 \times 10^{-5}$	$2.59 \pm 2.49 \times 10^{-8}$	$6.13 \pm 3.93 \times 10^{-9}$	$0.49 \pm 1.97 \times 10^{-8}$

Note: Bolding convention not applicable to these data.

Table F-4
2005 Radioactivity Concentrations in Edible Portions of Fish From
Cattaraugus Creek

Cattaraugus Creek above the Springville Dam (BFFCATC)

Annual 2005

Species	% Moisture	Sr-90 (μ Ci/g - dry)	Cs-137 (μ Ci/g - dry)
Hog-nosed Sucker	77.1	6.01±0.85E-08	4.41±4.06E-08
Hog-nosed Sucker	73.8	5.84±0.52E-08	0.85±5.02E-08
Hog-nosed Sucker	72.9	7.64±0.56E-08	-0.13±3.65E-08
Hog-nosed Sucker	72.1	4.19±0.37E-08	2.93±3.99E-08
Hog-nosed Sucker	73.3	5.49±0.58E-08	2.19±3.91E-08
Hog-nosed Sucker	71.6	2.05±0.08E-07	1.47±3.05E-08
Hog-nosed Sucker	74.2	5.23±0.61E-08	3.81±3.97E-08
Hog-nosed Sucker	72.4	3.46±2.33E-09	1.24±3.21E-08
Hog-nosed Sucker	73.2	5.90±0.51E-08	2.20±2.86E-08
Hog-nosed Sucker	74.0	5.72±0.47E-08	2.27±3.12E-08
Average % Moisture	73.5		
Median		5.78E-08	<3.78E-08
Maximum		2.05E-07	4.41E-08
Minimum		3.46E-09	<2.86E-08

Cattaraugus Creek below the Springville Dam (BFFCATD)

Annual 2005

Species	% Moisture	Sr-90 (μ Ci/g - dry)	Cs-137 (μ Ci/g - dry)
Steelhead Trout	74.6	8.78±1.75E-09	7.67±3.27E-08
Steelhead Trout	67.2	5.61±1.62E-09	1.32±1.45E-08
Steelhead Trout	71.5	5.01±1.64E-09	6.16±4.29E-08
Steelhead Trout	71.7	6.07±1.77E-09	1.70±1.74E-08
Steelhead Trout	73.7	2.30±1.22E-09	4.18±2.69E-08
Steelhead Trout	67.6	2.64±1.85E-09	0.00±2.48E-08
Steelhead Trout	68.9	6.16±2.03E-09	-0.80±2.40E-08
Steelhead Trout	65.4	3.76±1.76E-09	1.46±2.12E-08
Steelhead Trout	72.9	1.01±0.26E-08	1.75±2.58E-08
Steelhead Trout	74.3	5.77±1.97E-09	0.00±1.83E-08
Average % Moisture	70.8		
Median		5.69E-09	<2.44E-08
Maximum		1.01E-08	7.67E-08
Minimum		2.30E-09	<1.45E-08

Note: Bolding convention applied to these data. See page F-2

Table F-4 (concluded)
2005 Radioactivity Concentrations in Edible Portions of Fish From
Cattaraugus Creek

Cattaraugus Creek Background (BFFCTRL)

Annual 2005

Species	% Moisture	Sr-90 (μ Ci/g - dry)	Cs-137 (μ Ci/g - dry)
Brown Trout	72.7	3.81±1.67E-09	3.36±3.75E-08
Brown Trout	72.0	2.99±1.98E-09	-0.92±3.51E-08
Brown Trout	73.6	1.36±0.25E-08	-0.39±4.51E-08
White Sucker	79.0	6.13±1.77E-09	0.37±3.07E-08
Hog-nosed Sucker	74.9	7.96±2.67E-09	-3.41±3.60E-08
White Sucker	78.4	7.14±2.17E-09	0.25±4.44E-08
White Sucker	79.7	1.60±0.20E-08	0.23±2.61E-08
Hog-nosed Sucker	75.1	7.92±1.57E-09	-1.36±2.75E-08
White Sucker	79.5	1.43±2.33E-09	-0.03±2.55E-08
White Sucker	77.1	4.08±1.94E-09	9.67±9.62E-09
Average % Moisture	76.2		
Median		6.64E-09	<3.29E-08
Maximum		1.60E-08	9.67E-09
Minimum		<2.33E-09	9.67E-09

Note: Bolding convention applied to these data. See page F-2 ^{CD}

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